

The Claims Defining the Invention are as follows:

1. A method for cultivating biomass, comprising the steps of:
 - (a) Selecting at least a plant variety from the plant genus *Casuarina* capable of growing at a density equivalent to at least 5,000 stems per hectare for a period of 2 to 5 years;
 - (b) Cultivating the plant variety for two to five years under suitable conditions to maintain the plantings at a density equivalent to at least 5,000 stems per hectare; and
 - (c) Harvesting the resultant biomass between 2 and 5 years from the date of initial plantings.
2. A method according to claim 1, wherein *Casuarina* plants are grown at a density equivalent to at least 10,000 stems per hectare.
3. A method according to claim 1, wherein *Casuarina* plants are grown at a density equivalent to at least 20,000 stems per hectare.
4. A method according to claim 1, wherein *Casuarina* plants are grown at a density equivalent to between 40,000 and 60,000 (inclusive) stems per hectare.
5. A method according to claim 1, wherein *Casuarina* plants are grown at a density equivalent to approximately 42,000 stems per hectare.
6. A method according to claim 1, wherein the *Casuarina* plantings are harvested within 2 to 4 years
7. A method according to claim 1, wherein the *Casuarina* plantings are harvested at 3-years from planting.
8. A method according to claim 1, wherein during harvesting individual *Casuarina* stems are cut adjacent to, but above, the roots of the variety.
9. A method according to claim 8, wherein re-growth of the *Casuarina* plants is fostered following harvesting of the plantings.

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10. A method according to claim 9, wherein the plantings are harvested every 2 to 5 years from planting or the last harvest.
11. A method according to claim 9, wherein the plantings are harvested every 2 to 4 years.
- 5 12. A method according to claim 9, wherein the plantings are harvested at 3-years intervals.
13. A method according to claim 1, wherein the *Casuarina* plant variety is selected from the group comprising: *Casuarina cunninghamiana*, *Casuarina glauca* or *Casuarina obesa* or a hybrid developed from these varieties.
- 10 14. A method according to claim 13, wherein the *Casuarina* plant variety is a hybrid generated by crossing *Casuarina cunninghamiana*, *Casuarina glauca* or *Casuarina obesa* with one of the other aforementioned species.
- 15 15. A method according to claim 13, wherein the *Casuarina* plant variety is a hybrid variety generated by crossing *Casuarina cunninghamiana* and *Casuarina glauca*.
16. A method for cultivating timber, comprising the steps of:
- (a) Selecting at least a plant variety from the plant genus *Casuarina* capable of growing at a density equivalent to at least 5,000 stems per hectare for a period of 2 to 5 years;
- 20 (b) Cultivating the plant variety selected in step (a) under suitable conditions to maintain the plantings at a density equivalent to at least 5,000 stems per hectare; and
- (c) Cultivating, in close proximity to the plant variety selected in step (a), at least a second plant species.
- 25 17. A method according to claim 16, wherein the second plant species takes approximately 3 to 20 years to reach maturity.
18. A method according to claim 16, wherein the second plant species takes between 6 to 18 years to reach maturity.

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19. A method according to claim 16, wherein the second plant species takes between 10 to 15 years to reach maturity.
20. A method according to claim 16, wherein the second plant species is high value timber species.
- 5 21. A method according to claim 16, wherein the second plant species is selected from the varieties: *Grevillea robusta* (silky oak) or *Toona ciliata* (red cedar).
22. A method for cultivating timber, comprising the steps of:
- 10 (a) Selecting at least a plant variety from the plant genus *Casuarina* capable of growing at a density equivalent to at least 5,000 stems per hectare for a period of 2 to 5 years;
- (b) Cultivating for 2 to 5 years the plant variety selected in step (a) under suitable conditions to maintain the plantings at a density equivalent to at least 5,000 stems per hectare;
- 15 (c) Cultivating at least a second plant species capable of producing relatively high-value timber within about 10 to 15 years within approximately 0.5 to 5 meters of the plant variety cultivated in step (b); and
- (d) Harvesting the plant variety cultivated in step (b) at repeat intervals of approximately 2 to 5 year until the second plant species has reached maturity or at least until it has reached a stage of harvest.
- 20 23. A method according to claim 22, wherein a plurality of high-value timber species are grown in proximity to *Casuarina* plantings.
24. A method according to claim 23, wherein both *Grevillea robusta* and *Toona ciliata* are grown in close proximity to the *Casuarina* plantings.
- 25 25. A method according to claim 22, wherein the second plant species selected in step (c) is harvest between 10 and 15 years from initial planting.
26. A method for producing *Casuarina* hybrid seeds comprising:
- (a) Growing a first *Casuarina* species to sexual maturity and selecting plants of that species that have a phenotype of female fertility;

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- (b) Growing a second Casuarina species to sexual maturity and selecting plants of that species that have a phenotype of male fertility;
 - (c) Allowing cross-pollination between the female plants from step (a) with mature pollen from the male plants from step (b);
 - 5 (d) Raising the female plants to produce hybrid seeds having genetic material from both parents; and
 - (e) Harvesting the hybrid seeds.
27. A method for raising Casuarina seedlings comprising the step of: cultivating
- 10 the seedlings in the presence of a suitable water-absorbent paste or gel product.